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On the 29th of December, 1900, two females carrying eggs were sent to the zoölogical department of Stanford University by Mr. J. B. Babcock of the California State Fish Commission. These were procured in the market and had been caught in San Francisco Bay. The eggs of one of these were in various stages of gastrulation, while the others were older, showing slight pigmentation of the eyes. During the following summer, while aboard a fishing steamer off the California coast, I was shown six females "in berry." In one of these the embryos were half-developed zoöas, and the young of another were only slightly more advanced, while the remaining carried larvæ almost ready to burst their membranes. The captain of the vessel stated that he had taken egg-bearing females in every month of the year, and that the "yellow eggs" (young stages) occurred from the first of October until some time in January. This statement is supported by the discovery of seven other females taken off Moss Landing in Monterey Bay during January, 1902. All these carried eggs, which were in various stages, ranging from late gastrulation to half-developed zoöas. It thus appears that the breeding season of *Cancer magister* commences in the late summer or during the autumn and usually continues until some time in the following summer. H. H.

**Pratt's Invertebrate Zoölogy.**<sup>1</sup>—This new book by Professor Pratt of Haverford College consists of a series of directions and descriptions for the guidance of students in their laboratory work in connection with comparative anatomical study of invertebrated animals. The types for study are selected from the following groups and in the order named: insects, myriapods, Crustacea, annelids, platyhelminths, Bryozoa, mollusks, ascidians, echinoderms, Hydrozoa, sponges, Protozoa. Several types from each of the important phyla are treated, and thus within groups the practical study is made truly comparative. This is important, for such comparisons as untrained students can make for themselves are necessarily limited in the usual series of types with a single representative of each important phylum. Another valuable feature of these practical directions is that each lesson is complete in itself, so that the sequence of types may be varied at the will of the teacher. This is also of advantage in selecting the exercises of which the book contains more than ordinarily can be accomplished in a single year's course. The author suggests the possibility of beginning with the last lessons on

<sup>1</sup> Pratt, H. S. *Invertebrate Zoölogy*. Boston, Ginn & Company, 1902. 210 pp.

the unicellular forms and working upward to the higher animals, but he prefers the arthropods for the introductory work because they are so convenient for teaching the fundamental principles of comparative anatomy.

Apparently there is no special reason for the position of the lesson on the ascidians between those on the mollusks and echinoderms. Probably most teachers will prefer to place this type at the end of the course on invertebrates, when there is a natural transition to the study of the vertebrates.

In the plan of the laboratory directions there is a general resemblance to the well-known guides by Huxley and Martin, and Marshall and Hurst; but there is a great and important difference in that there is not placed before the student a description so complete as to limit the laboratory work to that of merely examining the natural objects in order to verify the printed statements. On the contrary, we find a judicious combination of description of the difficult and time-wasting points with practical directions for suggested problems which are not beyond the student's ability and time for investigation. Such an arrangement gives a desirable mean between two common extreme methods of laboratory teaching,—the one aiming to inform the student through verification of quite complete descriptions, the other attempting to stimulate originality and investigation by leaving him largely dependent upon the natural materials, with a minimum of direction. A combination of the two methods in a laboratory manual will be welcomed by all teachers who believe that the aim of zoölogical instruction is not only to furnish students information concerning the science, but also to give them practice in acquiring some knowledge through their own investigations.

In addition to the practical directions, the book contains a useful appendix on classification of animals and one with short definitions of the principal groups. An excellent glossary of zoölogical terms serves also to indicate where they occur in the lessons; and there is a general index.

In all essential respects this new laboratory manual appears to be excellent, and it deserves the attention of all teachers who use invertebrate types in their courses of zoölogy.

M. A. B.

**Notes on Birds.** — A very good local list of the birds of north-western Montana is presented in *The Summer Birds of Flathead Lake*, by P. M. Silloway, issued as a bulletin of the University of Montana. It includes an annotated list of 128 species noted between